

WHAT IS CLAIMED IS:

- 1 1. A ground-fault detecting device, comprising:
 - 2 a power source, electrically insulated from a vehicle body;
 - 3 a pulse signal generator, generating a pulse signal having a high level
 - 4 and a low level which are appeared repeatedly in a prescribed cycle;
 - 5 a detection resistor, connected to the pulse signal generator and the
 - 6 power source;
 - 7 a coupling capacitor, connected to the detecting resistor in series;
 - 8 an integrator, integrating a difference between a first reference voltage
 - 9 and a detection voltage of the pulse signal at a connecting point of the detection
 - 10 resistor and the coupling capacitor over an integration interval; and
 - 11 a ground-fault determinant, judging whether a ground fault is occurred
 - 12 on the basis of an output of the integrator,
 - 13 wherein the integration interval has at least part of a high-level interval
 - 14 and a low-level interval of the pulse signal.
- 1 2. The ground-fault detecting device as set forth in claim 1, wherein the
2 integrator includes:
 - 3 an integration circuit, integrating the difference between the detection
 - 4 voltage and the first reference voltage; and
 - 5 an integration reset signal generation circuit, generating a reset signal
 - 6 for rendering the integration circuit in a reset state over intervals other than the
 - 7 integration interval on the basis of the pulse signal supplied from the pulse signal
 - 8 generator.

1 3. The ground-fault detecting device as set forth in claim 1, wherein the
2 ground-fault determinant is a hysteresis comparator which compares the output
3 of the integrator with a second reference voltage for obtaining a ground-fault
4 detection output.

1 4. The ground-fault detecting device as set forth in claim 1, wherein the
2 ground-fault determinant is a sample-and-hold circuit which sample-and-holds the
3 output of the integrator as an integration value for obtaining a ground-fault
4 detection output.

1 5. The ground-fault detecting device as set forth in claim 1, further
2 comprising a compensation capacitor, having a capacitance corresponding to a
3 vehicle-side capacitance, and provided between the vehicle body and the
4 coupling capacitor.

1 6. An insulation resistance measuring device, comprising:
2 a power source;
3 an insulation resistance, electrically insulating the power source from a
4 vehicle body;
5 a pulse signal generator, generating a pulse signal having a high level
6 and a low level which are appeared repeatedly in a prescribed cycle;
7 a detection resistor, connected to the pulse signal generator and the
8 power source;
9 a coupling capacitor, connected to the detecting resistor in series;
10 an integrator, integrating a difference between a first reference voltage

11 and a detection voltage of the pulse signal at a connecting point of the detection
12 resistor and the coupling capacitor over an integration interval; and
13 an A/D converter, A/D converting an output of the integrator as an
14 integration value so as to generate a digital value corresponding to a resistance
15 value of the insulation resistance,
16 wherein the integration interval has at least part of a high-level interval
17 and a low-level interval of the pulse signal.

1 7. The insulation resistance measuring device as set forth in claim 6,
2 further comprising a ground-fault determinant, judging whether a ground fault is
3 occurred on the basis of an output of the integrator.